



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,070	05/12/2005	Johannes Engelbertus Adrianus Maria Van Den Meerakker	NL02 1185 US	5660
24738	7590	08/23/2007		
PHILIPS ELECTRONICS NORTH AMERICA CORPORATION INTELLECTUAL PROPERTY & STANDARDS 370 W. TRIMBLE ROAD MS 91/MG SAN JOSE, CA 95131				
			EXAMINER	
			DAHIMENE, MAHMOUD	
			ART UNIT	PAPER NUMBER
			1765	
			MAIL DATE	DELIVERY MODE
			08/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/535,070

Applicant(s)

VAN DEN MEERAKKER ET AL.

Examiner

Mahmoud Dahimene

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 and 12 is/are allowed.
- 6) ☒ Claim(s) 8-11, 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 8-11, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. (SCIENCE Vol. 291, 2001, pages 630-633) in view of Zhang et al. (us 2002/0176276) and Majumdar et al. (US 2002/0175408).

4. Regarding claims 8-13, The reference of Huang discloses nanostructures are conventionally fabricated by dispersion of nanowires in dispersing agent such as ethanol solution (page 631, column 1), and which nanowires are provided with

Art Unit: 1765

a surface layer of desired material. It is noted that Huang is silent about the method of manufacturing the nanowires as described by the applicant in claims 1 and 2, however, "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." MPEP 2113 [-R]. Claims 8-11, 13 describe a product, no property of the claimed the product(s) is associated with the method of making the nanowire, applicant did not show unexpected properties in using the specific nanowires as claimed.

It is noted that Huang does not expressly disclose the length of the wires in the range between 0.3 and 1 micrometer, a length distribution or an error margin of the length.

Zhang teaches "Metal and semiconductor nanowires are defined as wires with diameters below 50 nanometers (typically 2 to 20 nanometers), and with lengths in the range of 0.1 micrometers to 50 micrometers" (paragraph 0047), suggesting the range of 0.1 to 50 micrometers, "and lengths ranging from 1 to 20 micrometers" (paragraph 0049) are conventional for semiconductor nanowires.

Majumdar suggests applications where the length of the nanowires is critical for the operation of the product are conventionally known, namely, allowing the fabrication of sensors or actuators with a wide range of fundamental resonant frequencies (paragraph 0194).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the process of Huang to select a nanowire range of length including at least 1 micrometer, a length distribution or an error margin of the length, because Zhang teaches a range including at least 1 micrometer wire length and Majumdar suggests functionality of the device is related to the nanowires length. One of ordinary skill in the art would have been motivated to select a specific nanowire length including 1 micrometer, and control the length distribution or an error margin of the length, in order to fabricate devices which functionality is related to the nanowire length as suggested by Majumdar.

Response to Arguments

5. Applicant's arguments, see pages 5-10, filed 6/18/2007, with respect to rejection of claims 1-7, under 35 USC § 103 have been fully considered and are persuasive in view of the fact that the cited references do not suggest "anodically etching so as to form substantially parallel pores with a pitch corresponding to the pitch of the openings in the etching mask at a current density such that the diameter of the pores becomes at least as great as the pitch of the pores, whereby nanowires are formed". The rejection of claims 1-7, under 35 USC § 103 has been withdrawn.

6. Applicant's arguments, see pages 10-11, filed 6/18/2007, with respect to the rejection(s) of claim(s) 8-11,13 under 103 have been fully considered and are

Art Unit: 1765

persuasive in view of the reasons cited above. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Huang et al. (SCIENCE Vol. 291, 2001, pages 630-633), Zhang et al. (us 2002/0176276) and Majumdar et al. (US 2002/0175408).

Allowable Subject Matter

7. Claim 1-7 and 12 are allowed. The following is a statement of reasons for the indication of allowable subject matter:

8. Regarding claim 1, the cited prior art of record fails to disclose or suggest a method of manufacturing nanowires from semiconductor material comprising a step of "anodically etching so as to form substantially parallel pores with a pitch corresponding to the pitch of the openings in the etching mask at a current density such that the diameter of the pores becomes at least as great as the pitch of the pores, whereby nanowires are formed", in combination with the rest of the steps/limitations of claim 1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mahmoud Dahimene whose telephone number is (571) 272-2410. The examiner can normally be reached on week days from 8:00 AM. to 5:00 PM..

Art Unit: 1765

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



MD.

NADINE G. NORTON
SUPERVISORY PATENT EXAMINER

